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ABSTRACT

Postsecondary education's responses to economic change are discussed, based on 22 projects supported by the Fund for the Improvement of Postsecondary Education (FIPSE). After identifying common themes of the FIPSE "Education and Economy Alliance" projects, new directions for postsecondary education are considered, along with policy concerns. Differences between the FIPSE projects, which are briefly described, and more traditional programs are discussed. Most of the projects offer new approaches to curriculum/program content that respond to business and individual needs. The projects include changes in the timing and location of offerings as well as new teaching methods. A number of the projects have formed new partnerships among education, business, community organizations, and unions to design basic and literacy programs for adults. Other projects have formed partnerships for professional development and skills upgrading. A final type of FIPSE project has been the development of partnerships for local economic and community development. Finally, questions concerning the content, delivery, sources, and financing of postsecondary education are raised. For each project, information is provided on the sponsoring agency, contact persons, address, and phone number. (SW)

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POSTSECONDARY RESPONSES TO A CHANGING ECONOMY*

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The Fund for the Improvement of Postsecondary Education (FIPSE) has supported a number of projects that are concerned with postsecondary education and the economy. Using the current twenty-two projects that comprise FIPSE's Education and Economy Alliance as a springboard, this paper focuses on postsecondary education's responses to changes in the direction and pace of the economy. We begin by exploring the common threads on themes that underlie the projects. The FIPSE projects are then discussed in terms of new directions for postsecondary education. We end the paper with a set of critical questions for postsecondary education policy makers and program operators.

COMMON THEMES

While the problems addressed and the solutions developed by each of the FIPSE Alliance projects differ, there are a number of common threads or themes that run across these efforts. These themes are critical to understanding the uniqueness of these projects in the context of other postsecondary education programs and practices. First, these projects are each responding to a problem or set of problems that are a result of changing economic (or demographic) realities. For some the situation is large numbers of displaced workers or workers in need of skill upgrading. For others it is the need for upgrading technological and scientific skills. Other projects are facing the situation of a lack of basic skills among a large group of adults, while some projects are responding to the need for increasing the human resource potential of employees within an industry or work setting. Finally, some are concerned with the issue of financing postsecondary education in the future and postsecondary education's role in economic or community development.

Second, the population being served by these projects is adults, most of whom are or have been in the workforce. As such these projects represent a new direction for many of the postsecondary institutions with which they are affiliated. For many of these institutions it is the first time that they are dealing with a population of learners who are mature, experienced, and looking for educational programs that are responsive to their needs for training, jobs, or self improvement.

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Third, each of the projects is built on some form of partnership or collaboration among business, education, organized labor, local government, and/or community organizations. At its most basic level the partnership involves a single educational institution working with a single business, group of adults, or labor organization. At its most advanced level the collaboration involves multiple organizations working together to solve a problem.

Fourth, most of these projects are "on the margin". That is, they are either not part of a postsecondary institution or they are housed in offices or centers that are not part of the main curricular or educational units within the institution. They usually operate in whole or in large part on soft monies. They are usually on the fringe of postsecondary education programs.

Finally, the projects are primarily concerned with empowering people and/or organizations. Most of the projects focus on providing individuals or organizations with the skills and services necessary for career and life planning on the part of the individual, and human resource planning by organizations. These skills range from basic literacy and advanced scientific training on one level and education/career development and human resource development on another level.

NEW DIRECTIONS FOR POSTSECONDARY EDUCATION

The FIPSE Alliance of projects offers some new approaches for responding to changes in the economy. These approaches affect changes at different levels and at different points in the postsecondary education system. Content, modes of delivery, sources, and financing resources are considered to be the resources that comprise the postsecondary education and training system. We first discuss how the FIPSE Alliance projects differ from more traditional or mainstream programs in general terms and then provide brief overviews of the Alliance projects. This latter discussion places each of the projects under one of the following three Alliance themes: partnerships (among education, businesses, labor, government, and community organizations) for basic skills and adult literacy; partnerships for professional skills and development; and partnerships for economic and community development.

Content of education and training is the variety of skills, knowledge, and understanding that individuals and the society need. It also includes support services for individuals and the community. While most postsecondary education institutions have a mission that dictates the content of their programs, new education content is constantly being created and incorporated into programs. Changes in demographic and economic conditions have affected parallel changes in the content of programs at many postsecondary institutions. For some, this change has meant being more responsive to the needs of local businesses, while for others it has resulted in new programs in basic skills, retraining, or skill upgrading for individuals.

Most of the FIPSE Alliance projects offer new approaches to curriculum/program content that respond to business and individual needs. These approaches differ from the traditional course content of postsecondary education in a number of ways. First, the content is often learner or employer driven. That is, the learner or the employer is an active participant in developing the

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content of the courses or programs. Second, the content is directly relevant to the life situations of these adults. Here we find content that is job specific, skill related, or in direct response to needs for support services including: counseling, information, educational advice, and financial advice. Third, the content is responsive to local and national economic realities. From small business training to understanding structural shifts in the economy, the content of these programs reflects current perspectives that are related to the economic lives of the adults who participate in them.

Each of the FIPSE Alliance projects has modified or developed new curriculum content to meet the needs of individual adults or of business organizations. From basic literacy to advanced scientific training, and from skill retraining to provision of diverse support services, these projects represent a set of new content approaches for postsecondary education that is responsive to the demographic and economic changes occurring in society. While the predominant mode of postsecondary education has been to follow a standard curriculum (in a given major), new educational content must be created if postsecondary education is to keep pace with the changing needs of society. These projects offer a set of models for changes in the content of postsecondary education and training programs that can be incorporated into existing programs or added on as a new program or area of service. At the same time, a process for identifying the types of job, intellectual, and self-management skills that are needed by adults should be developed. This process requires postsecondary education to play the role of an honest broker between adult workers and those organizations and individuals that influence workers' lives. As such we need to adopt a neutral stance, admitting what we don't know and stressing what we know in a process which involves the learners themselves in the identification of the content of education and training.

Sources of education and training are the institutions and organizations which offer postsecondary education and training programs and services (all categories). Three sources are identified. First, are public and private institutions of higher education including universities, two and four year colleges, and vocational and technical schools. These are the traditional providers of postsecondary education and training and tend to serve the needs of traditional students (undergraduate and graduate). To an ever increasing extent, especially with the growth of two-year colleges, these institutions are serving other groups of learners including adult workers, retirees, re-entry women, and technical career oriented youth.

Second, are corporate training offices and institutes. Corporate training offices offer formal and informal education and training programs to corporate employees. This internal training for new and existing employees usually involves skill (re)training, skill upgrading, management/professional training or basic skills instruction. Training institutes also have been set up by large corporations to respond to specific needs for their workforce. These institutes can operate internal to an organization or external to it (separate entities set up by the corporation) or both.

The third source of postsecondary education and training is private skills training institutions and individuals. Associations, unions, consulting firms, service organizations, proprietary-schools, and individual consultants can offer programs and services. Today, associations such as the American Banking Institute and the American Management Association and private training organizations offer more programs and have more "students" than all traditional postsecondary education institutions combined. Service organizations, like the "Y", community service agencies, and churches all offer a wide array of postsecondary education, training, and services. Through funds provided in collective bargaining agreements, cooperation with colleges and universities, and their own financial support, unions have created a variety of mechanisms to support the higher education of workers through financial subsidies and program delivery. Private proprietary schools offer specific training in specified skill areas such as secretarial, beauty/culture, dental technician, drafting, computer programming, and business. Finally, the growth of private consultants who offer training and other services to corporations, social groups, and individuals has been nothing short of phenomenal. From self help to speed reading, to career/life planning to specific skill training, private consultants are a growing source of postsecondary education and training.

A number of the FIPSE Alliance projects are concerned with making diverse sources of education and training available to adults and to employing organizations. These projects, through new partnerships between postsecondary education on the one hand and business, unions, community agencies, or governments on the other, recognize the need for making more than one source of postsecondary education and training available. Mechanisms to assist educational institutions in responding both cooperatively and individually to the needs of local businesses and other groups have been developed. Programs committed to creating and maintaining educational "health" and "balance" in the lives of individuals through the availability to the workforce of ongoing educational services of diverse kinds also have been tried by the FIPSE projects.

Modes of delivery are the methods by which education and training programs and services are made available. These include the method, timing, and location of instruction as well as the methods by which support services are delivered. On campus, classroom/lecture courses of one semester in length have been the predominant mode of delivery for higher education. While some institutions take the mode of delivery for granted, more and more institutions are varying this pattern in an attempt to respond to the needs of different groups of students. Developing new delivery systems is the area most affected by the FIPSE Alliance projects. Almost every one of the Alliance projects viewed new means for delivery of services as essential to the success of their efforts. These projects recognize that adults learn best in ways different than youth. They capitalize on the learning strengths of adults which emphasize the development of cognitive facilities calling for integration, interpretation, and application of knowledge, while deemphasizing the processing and acquisition of large amounts of new information.

Taken as a whole the FIPSE projects offer a set of new or innovative approaches to the delivery of educational services to adults. In addition to changes in the timing and location of offerings, new pedagogies and methods of

instruction have been used to deliver services to diverse populations of adults. Much of these curricula is experience based, using direct hands-on experience as a teaching strategy. A number of programs are using computers to aid the instruction, while others use peer instructors to deliver the newly designed curriculum. It is clear that delivery is the primary postsecondary education resource that has been affected by postsecondary education's responses to changes in demographics and the economy. These new delivery systems have made postsecondary educations services available to an array of new adult learners across the country.

Financing resources are the fourth set of elements shaping postsecondary education's responses to education and training requirements of the shifting economy, and represent the public and private sources that finance postsecondary education and training. Included are public resources, corporate resources, and other private resources. Postsecondary education has traditionally relied upon public resources (to the institution or to the individual) and other private resources (donors, individual students, etc.) as its primary means of financial support. Recently, however, corporations have contributed to the financial pie through employment-based tuition assistance to employees; corporate training programs; donations of equipment and personnel; and R and D support. As the demographic and economic picture changes, new strategies for financing postsecondary education and training will be necessary.

A number of the FIPSE Alliance projects are directly concerned with new financing schemes for postsecondary education and training. One is working with the State Legislators to help them understand the relevance of economic changes to the financing of higher education. Regional policy briefings and state seminars are held to raise awareness and information levels of legislators on the vital issues of higher education and economic development. The project recognizes the critical importance of state legislators to the future financing and directions of postsecondary education and the importance of an information base that is built on new channels of communication between postsecondary education and state legislatures.

A second project is concerned with developing a new financing scheme for the support of educational health. Instead of the employer "client" paying a postsecondary educational "provider" a certain sum of money to deliver a given set of services—instructional or support in nature—employers join an organization that makes services available to members and their employees based on agreed upon goals and needs.

Other projects are using private industry and union resources for equipment purchase, curriculum design, tuition, and instruction. While most of these financing resources rely on private industry, a number of projects are trying to develop strategies for using state and federal programs to finance higher education. In the future these and other approaches to financing postsecondary education will be critical.

By looking at postsecondary education and training resources as the relationship between content, sources, modes of delivery, and financing, we have

focused, in a general way, on new and innovative approaches to these elements that have been developed by the projects in the FIPSE Cluster. These new approaches center on a number of common factors. First, the recognition that new educational content needs to be continuously developing to be responsive to business and individual needs. Second, the major new sources of postsecondary educational services for adults include corporations and peripheral offices within the educational institutions that are separate from traditional academic departments. Third, methods, timing, and location of instruction have undergone the most dramatic changes. Interactive computer techniques, peer teachers, short flexible courses, hands-on-experience and off-campus programs are rapidly becoming the norm of adult learning. Finally, new financing schemes for postsecondary education are being actively explored. From direct corporate support, to support through new federal and state programs, postsecondary institutions are identifying new sources of financing.

While changes in education and training resources have resulted from these projects, the recognition and development of partnerships and collaborations with other institutions and organizations is the most important new approach being used. Through these partnerships postsecondary education is better able to respond to the changes occurring in our society. Education joins with business, labor, and government to become partners in all aspects of the postsecondary education process from content and sources to modes of delivery and financing. These partnerships help develop forums for dialogues on critical issues central to the health of the postsecondary education system, the local economy, the national economy, and the nation's human resources. Each of the FIPSE Alliance projects are discussed in terms of such partnerships.

PARTNERSHIPS FOR BASIC SKILLS AND ADULT LITERACY

A number of the Alliance projects have formed new partnerships among education, business, community organizations, and unions to design basic skills and literacy programs for adults.

The English Language Training for the Workplace Project of Arizona State University represents a unique approach to the preparation and delivery of work-related educational services to adults. The project is developing an on-site language training program for industry. By participating in the program, workers who have difficulty using English will learn the language skills specifically needed to do their jobs effectively and will increase their potential for advancement in the company. To ensure relevance of the training program, the project staff is conducting a comprehensive needs assessment involving extensive on-site observation and interviewing. The project staff from Arizona State University is working collaboratively with a Phoenix branch of Honeywell, Incorporated, to pilot the program. In addition, representatives from local community colleges, adult education programs, and the business, industry, education council serve on an advisory board. The board is working with the staff to plan for an education-industry partnership that can provide job-related language training at a variety of local industrial sites.

The READI (Rural Education/Adult Development in Idaho) Project of the Idaho Cooperative Extension Service and the University of Idaho is designed to develop a computer literacy program for rural adults that can be replicated in other

areas. The project works with the State Cooperative Extension Service in designing curriculum and training as well as in networking resources. In addition, the Project works with an advisory group to develop the program on a county level by training local resource people to teach the classes and by helping these groups identify ways technology can spur economic development. The classes feature the computer as a problem solving and management tool. This approach is useful to those participants who are seeking jobs or who operate small businesses, farms, or ranches. Thus, the Project is working on developing educational strategies to meet the needs of people living in rural isolation, often with limited economic and educational resources.

The TECPLAY Project of the National Institute for Work and Learning and the Charleston Higher Education Consortium provided the seed funding for the staffing of a Fair Break Center located in a small business "incubator" building on the East Side of Charleston, SC. The Charleston Higher Education Consortium, acting as local project coordinating agent, assisted the City of Charleston, Trident Technical College, the Trident Work-Education Council, and City Venture Corporation in identifying areas of responsibility related to Center operations and involvement of neighborhood organizations, area employers, and other community resources. The project commenced in July 1982, with a local Fair Break Center providing a computer assisted program for upgrading basic skills and a comprehensive career development program. The purpose was to enable local residents of the urban minority neighborhood with high unemployment to compete for jobs being created in the area. When FIPSE funding ended in 1984, the local Private Industry Council funded the project with funds from the Job Training Partnership Act (JTPA). The Center is administered through Trident Technical College.

The Applied Basic Skills: Education for Work Project of Jobs for Youth/Chicago is a project that teaches basic academic skills to economically disadvantaged out-of-school youths. The program links the workplace with the real educational needs of youth utilizing job-related educational materials to teach educational skills. The curriculum is integrated into the employment preparation and job placement/promotion functions of Jobs for Youth. Private sector employees participate in curriculum development and serve as volunteer tutors and instructors. The curriculum is learner-centered using employers training materials as the basis for teaching reading comprehension, writing, math, and other basic skills.

PARTNERSHIPS FOR PROFESSIONAL SKILLS AND DEVELOPMENT

Recognizing the needs of many individuals for skill upgrading and those of many organizations for increasing the human resource political of employees, a number of the Alliance projects have formed partnerships for professional skill and professional development.

The Educational Bridges to Options in High Technology Employment Project of San Diego State University offers retraining and updating in biotechnology and analytical chemistry to about 100 mid-career adults who have a baccalaureate or higher degree in a scientific discipline and who completed their formal education over five years ago. This group includes some chemistry and biology high school instructors who are offering advanced placement courses at their

institutions. The program makes it possible for already-working individuals to expand and improve their knowledge to the state-of-the-art and fosters professional development and career enhancement. Furthermore, these educational opportunities enable workers presently employed in positions that are becoming obsolete and a result of technological or economic changes to have wider options for seeking new jobs. The industrial scientists on the project's Advisory Board serve to strengthen the link between the University and the industrial community, especially in the high technology fields which are expanding in San Diego County.

The Business Development and Training Center at Great Valley Corporate Center (PA) is a cooperative venture of the Compact of Lifelong Education Opportunities (CLEO), Rouse and Associates, and the Benjamin Franklin Partnership of the Commonwealth of Pennsylvania. The Business Development and Training Center represents an entirely new concept of how business and higher education can collaborate for economic and human resource development. The Center brings aggregated learning, business development assistance, and training services on site to the employers and employees located throughout the Route 202 high technology corridor. The Center, which utilizes an EMO (Educational Maintenance Organization) model, similar to the popular HMO model, provides companies with an ongoing up-to-date educational program. The Business Development and Training Center offers credit and non-credit courses, workshops and seminars, customized job training, access to a network of consultants and professional services, career and academic counseling, testing and assessment of prior learning, opportunities for internships and work study arrangements, and networking opportunities for special interest groups.

The Upper Division BSN for RNs Project of The College of State Island of The City University of New York has as its principal goal the establishment of an educational model and delivery system that will allow working RNs to have access to and progress toward the Baccalaureate in Nursing (BSN). Students enrolled in the program must already be licensed Registered Nurses, who obtained their prior postsecondary education in associate degree or diploma school programs. The model will include: off-campus instruction at hospital work sites; non-credit instructional workshops to address the special needs of working RNs; designing special schedule patterns to accommodate working adults with family responsibilities; and the establishment of a BSN Outreach Advisory Board of nursing administrators, labor organizations, nursing educators, and college administrators. Six hospitals are targeted for participation, four from Staten Island and two from Brooklyn, with 240 full time nurses expected to enroll in the program as matriculated BSN students.

The Graduate Professional Education for Information Specialists in an Electronic Age Project of the School of Communication, Information and Library Studies of Rutgers University is designed to assist in the development of partnerships between the School, corporations, and professionals for purposes of providing new educational programs for both practicing information specialists and graduate students enrolled in the School. Corporate and professional leaders will cooperate in identifying general educational requirements and specific skills needed to meet the growing demand for a variety of information specialists. The project incorporates seminars, colloquia, workshops, and the use of simulations as means of developing and testing new educational modules

and strategies.

The Cascade Business Development Center Project of Portland Community College offers small businesses a unique opportunity to establish themselves and grow in a supported environment. This facility will offer office and light manufacturing space to small businesses who anticipate growth and job creation. The space available is designed to be flexible in order to meet the facility needs of a wide variety of businesses. Below-market-rate rents will assist businesses in cutting their initial overhead. These businesses will be located in the incubator during their developmental period, up to three years. Many support services will be available to incubator tenants to help reduce overhead costs and provide high quality, professional services. High technology businesses also will have access to Portland Community College's laboratory and testing instruments and equipment which are located contiguous to the incubator. Equally important, each tenant will work with Portland Community College to design a management development plan, based on specific needs of his or her business. Classes, seminars, professional consultations, and related services will be included.

The Preparing for High Technology Careers In Computer-Integrated Manufacturing Project of the Milwaukee Area Technical College is training and retraining employees to enter high technology careers in computer-integrated manufacturing and disseminate software and courseware nationally through established networks. The project identified skills needed by new or retained employees; developed a resource center; retrained the workforce; developed partnerships with industry; and developed new courses and programs. The population being served is in the greater Milwaukee area with an emphasis placed on retraining presently employed persons. Research was conducted to identify the skills necessary to work in the factory of the future. A steering committee of industrial and educational leaders guided the study of occupations. Specific task forces surveyed automated occupational areas and recommend new and modified educational programs. Computerized Machining curriculum was begun as a new program in the fall of 1984. Extensive revisions were recommended in a number of departments including Industrial Engineering, Manufacturing Engineering, Numerical Control, Computer Science, and Electrical Mechanical.

The Associate Degree Program for Motorola Technicians Project of Rio Salado Community College trained 95 entry-level production-line workers selected by Motorola Incorporated to develop knowledge and skills sufficient to allow them to achieve the Associate in Applied Science Degree in Electronic Technology, and to allow them to return to the workplace at a higher level job. Nearly all students were women, including minorities, with no college experience. A variety of courses were offered, including mathematics, physics, chemistry, and basic and advanced electronics courses. Courses were held five days a week, eight hours a day, for one year. A variety of experiential learning techniques were used, including group discussions, laboratories, and competency-based training. Most instructors were adjunct faculty, and several electronic laboratory courses were taught by Motorola employees who became certified by the State to teach community college courses. All courses were taught at the Motorola training center in Phoenix, with the exception of chemistry, physics, and laboratory classes, which were taught at a technical college. Registration was offered at the work site, as were support services including: counseling,

tutoring, test-anxiety assistance, and team-building workshops. Motorola provided classrooms, space for tutoring, and social activities as well as books, technical equipment, and instructors for the electronics laboratories. Students were paid regular salaries during their training; the company provided a graduation dinner and assisted with the placement of students.

The Industrial Consortia Project of the New Hampshire Continuing Education Network is increasing educational opportunities for adults throughout New Hampshire and assisting institutions in responding both cooperatively and individually to the needs of outside organizations or groups as well as of the individual adult learner. The Network sought not only to expand credit and non-credit offerings on campus, but also to expand programs at off-campus sites. Its efforts also included the development of industrial consortia across the state to expand training opportunities for business and industry. One of the major functions of the Network staff is to assist institutions in seeking out organizations, companies, and groups of individuals with specific educational needs and to assist in the delivery of courses/programs to meet these needs through one or more Network institutions. Twenty-two colleges joined together to offer education and training programs to workers at the workplace. A request for proposal (RFP) process is used to provide information on the courses and programs being offered and for the selection of the provider of services. The Industrial Consortia Project involves businesses and industry in the active planning, decision making, and coordination of education programs in the state. Initially much of the education/training requested by the businesses was at the basic skills level. As more organizations joined together to obtain training for their employees, the range of courses and programs became more complex.

PARTNERSHIPS FOR ECONOMIC AND COMMUNITY DEVELOPMENT

The third subgroup within the Alliance consists of a number of projects that have developed partnerships for local economic and community development.

The School for New Learning Graduate program project of DePaul University is a three-year effort to develop and implement a Master of Arts program which integrates the skills and perspectives of the liberal arts with individually-tailored programs of study in various professional areas. It is designed for adults in environments characterized by change, turbulence, and value conflicts whose professional and personal needs are not met by traditional graduate programs. The program seeks to satisfy the increasing need in post-industrial America for practitioners who possess not only a high level of skills and knowledge in their established or emerging fields, but also a broader world view, professional vision and commitment to act on it. The curriculum of the program is informed by Mastery Criteria and consists of two parts. In the Professional area of Mastery the student, under the direction of a professional Mentor, focuses on the knowledge and skills specific to his or her professional area and uses the student's worksite as a learning environment. The Core Area of Mastery draws on the liberal arts to help the student address subjects, problems, and issues common to practitioners in all professional settings. Each student becomes part of a "Learning Cluster", an 18-member group which studies and learns together. Finally, every student designs and completes a major learning project, or "Master Work", which gives tangible evidence of the

student's attainment of professional "mastery" and links the skills and knowledge of professional practice with those of the academy.

The Worker Education for the 1980s Project of Boston College and the Massachusetts AFL-CIO is a unique new program in worker education. It brings academic specialists together with local unions to help develop a response to the threat of unemployment that now hangs over the heads of workers in declining or rapidly changing industries. The project seeks to establish "preventative" labor education to anticipate the shockwaves that new technology and foreign competition will continue to generate through the 1990s in many industries. By preparing workers well in advance, through programs in the local union hall where long-term trends in the industry are discussed, workers take early steps to gain new skills required for the future. They also begin to play a more active role in making recommendations for changes in their own work-places, jobs, and industrial sector. The collaborative project encourages participation in a new process where workers gain knowledge of and confidence in their own capacity to gain control both over their own future and that of their industry.

The Highlander Economics Education Project of the Highlander Research and Education Center is developing a participatory research and education process that will enable residents of rural Appalachian communities to deal more effectively with the impacts of the changing economy on their collective and individual lives. The project will do two things: develop models of cooperation whereby local higher education institutions and grassroots community groups can work together to meet community and individual needs resulting from changes in the economy; and develop an alternative economics curriculum to enhance the ability of rural residents to deal with changing economic development. The project is a three year program that will include: both participatory and traditional research on the changing national economy and its impacts on rural communities in Appalachia; the selection of a minimum of two communities and educational institutions in the region through which to develop the economics education program and models of cooperation; and the development, testing, and dissemination of an economics education curriculum for use within the region and elsewhere. Development of the project will be assisted by a regional advisory committee made up of representatives of institutions of higher education, representatives of grassroots community groups, and other community residents who have been involved in efforts to enhance economic development.

The Postsecondary Adult Literacy Education Project of the Center for Adult Education of the West Virginia Institute of Technology has developed a model for an adult postsecondary literacy development program using the highly relevant materials in a workplace setting with adult worker groups. The project recognizes the importance of literacy for dealing with the economic problems of the region and the personal problems that have resulted from the larger economic problems. In addition to the use of community or work based materials, the model includes the training of adult adjuncts to continue literacy development in the group. Adult participants in the project receive literacy training in basic reading, writing, and computation skills through a group process that is centered around issues that are community or work related. Unlike many other adult projects, this one is based on the belief that the issue or message is what drives the worker or adult to learn to read or write. Rather than literacy for literacy's sake, the project empowers people by providing literacy skills

and training for their own goals in their communities and workplaces. The project relies on adult adjuncts and peer pairing to deliver the program which is offered in rural communities, at union halls, and in prisons. The curriculum is experiential and learner-generated and the method of instruction relies on the issues as the delivery force behind the desire to learn. The impact of the project goes beyond the acquisition of literacy skill to the provision of skills that enables these adults to become participants in the economic and social life of their workplaces and their communities. It also helps local industries by improving the educational quality of their workforces.

The PIC/Higher Education Collaborative Project of the National Association of Private Industry Councils and the National Institute for Work and Learning fosters partnerships between PICs and postsecondary educational institutions so that higher education can play a visible and important role in JTPA through involvement in the local planning and implementation of job training programs, especially in the retraining of dislocated workers. Six SDAs (Northwest Pennsylvania; Franklin and Adams Counties, Pennsylvania; Chautauqua County, New York; Flint, Michigan; Columbus, Ohio; and Coeur d'Alene, Idaho) were selected to participate in the project which demonstrated the willingness of one or more institutions of higher education to cooperate. Activities at each site include at least two of the following: labor market information, supportive services and education and training. Outcomes include better service provision to dislocated workers: education and training in skills identified to be in demand, pre-employment skills training, counseling and job search skills often provided by faculty members on campus or at the workplace. Benefits for educational institutions iclude resources to update curricula and equipment; and for the PICs, the ability to utilize the expertise of faculty for assistance in program and policy planning, labor market analysis, and other areas of need.

The Employment Transition Project of The Institute for Science and Technology of The University of Michigan is aimed at increasing the probability of reentry into the labor force and/or acceptance to retraining programs for displaced workers. The project has the following objectives: 1) increasing labor market information; 2) increasing training-related information; 3) increasing self-esteem; 4) increasing information about one's own interests, skills, abilities, and values; 5) reducing barriers to decision-making; 6) increasing information and skills in job-seeking; 7) reducing stress and anxiety; 8) promoting the identification of existing formal and informal supports, the development of more supports, and the skillful utilization of these systems; 9) increasing problem-solving and goal-setting skills; and 10) developing excellent resumes and high levels of interviewing skills. The core of the program is a five-day, 30-40 hour training study circle workshop offered to displaced workers. Training modules have been developed to respond to each of the ten objectives cited above. The modules are of two types, informational or skill building, and focus on self assessment, labor market information, career planning, problem solving, goal setting, and self marketing skills and products. A study circle approach is used for the workshops. This involves a cooperative learning situation with an interactive educational approach to acquiring the information and skills critical to informed choices of available options. Through this approach, an internal support group is built as the participants learn the skills and knowledge necessary for making informed choices. Participants in the program have learned to recognize the power of

information. They understand its importance for decision making, they learn how to gather timely information, and they learn how to effectively use information to their advantage. Participants are better able to make decisions about reemployment and retraining options.

The Experienced Workers Re-Training Program of St. Louis Community College/St. Louis Metropolitan Re-Employment Project involves a local partnership of business, education, labor and government to provide outplacement services to assist employers and workers affected by structural changes in the local economy. The program "helps people to help themselves" toward gaining new employment through the provision of services that assist displaced workers. The project offers a variety of services to both workers and local employers including: counseling, job information, job placement, retraining information, outplacement workshops for employees, pre-layoff assistance, and on-the-job training. The Job Shop training workshop, which is one of the major components of the project, focuses on resume preparation, job search techniques, interviewing techniques, and preparation of letters of application. The project also offers a placement service for employers by providing them with a list of qualified applicants (with resumes) in a timely fashion. Laid-off or soon-to-be laid-off workers also receive counseling on a one-to-one basis to assess their needs, strengths, and employability skills. These workers are not always economically disadvantaged and most have never had to cope with the psychological and financial effects of unemployment. Most have not had to look for work or consider retraining before. Participants, as a result of the project, recognize that they must take responsibility for their own life transitions, and have used the services available to help with these transitions. Participants are learning job search and interviewing skills and some are retraining for new jobs. The project has also improved relations between the college and business sectors in the community with training programs being developed that are more responsive to business needs.

The Evaluating Non-Collegiate Sponsored Instruction Project of Vermont State Colleges offers a new approach to business and education partnerships. Through evaluations of employer sponsored instructional programs a more active and behavioral approach to partnerships will be developed. These evaluations will bring education and business together to stimulate post-secondary institutions and employers in developing long-term, balanced relationships. Relationships in which the career training expertise of business and industry is recognized and contributes to colleges' abilities to provide vocational preparation for its students; relationships in which colleges' expertise in intellectual development contributes to the vitality of the workforce. The evaluation of non-collegiate sponsored instruction is the first step in fostering meaningful educational collaboration between the firm sponsoring the training program and Vermont's postsecondary institutions. After each evaluation, a report is submitted to the firm which indicates, in the opinion of the evaluation team, the exemplary features of the training program and those areas needing improvement. A project staff person is designated to work with the firm in planning future educational endeavors. This usually means helping firms explore collaborative programs with area colleges that offer similar training. The project functions as an educational broker within Vermont, and is able to utilize the resources of the public and private colleges in this regard.

The project can also help the firm to improve the quality of its in-house instruction, or to find a college that will integrate the training program as part of an associate or baccalaureate curriculum. As a result the project offers a "free agent" service of the entire postsecondary system and as a "broker" between business and education.

The Public Investment In Higher Education: A Program for New England Legislators Project of the New England Board of Higher Education is aimed at increasing New England legislators' awareness of the importance of higher education to the region's economic development. Legislative understanding of the issues related to the financing of higher education is necessary to sustain the region's economic recovery, which has been influenced greatly by research, development and the efforts of skilled graduates. This project is meant to focus on higher education, the critical resource of New England, and how it can be improved for the benefit of all. To this end the project strengthens communication between the region's institutions of higher learning, its legislators and its industries, which education must serve. Major activities for the project include six state seminars for the legislators, each adapted to the needs of the individual states, semi-annual briefings for New England legislative leaders, and quarterly advisory council meetings. Information is disseminated through brief, data-based, policy-oriented publications designed for the legislators. The project more comprehensively linked legislators to a working coalition of leaders in higher education, business and labor. The policy briefings held in each New England state engage a wide variety of legislators both in participation and in thinking about where higher education stands today, where it is going, and why it is important to economic development in this region and the nation.

Critical Questions

By way of conclusion, the authors raise a set of critical questions for consideration by policy makers and practitioners as they plan future strategies for postsecondary education's response to economic change.

As the demographic and economic pictures continue to change what will be the changing set of skills, information, knowledge, and attitudes that adults will need? How can the content of education and training be responsive to the shifts that are anticipated? The FIPSE Alliance projects represent a growing number of postsecondary programs that are providing a wide range of content of education and training. Basic skills and remedial courses are being offered in and by corporations in increasing numbers. Adult Basic Education and Adult Literacy programs are also on the rise. At the same time two and four year colleges are offering basic skills programs to adults. Will these programs, offered at the workplace, in the community, and in postsecondary institutions have to grow as more adults are found to have inadequate basic skills preparation to meet the challenges of the future?

Postsecondary programs in job skills (vocational, retraining, and upgrading) have also been on the upswing. As new technologies have been developed, and as sectors of the labor force have been impacted by economic shifts, industries and individuals are in need of new skills. Postsecondary programs offered through all sources have been responding to this need for new

job skills. Within the FIPSE Alliance half of the projects offered new programs in skill development, retraining, or upgrading. How can postsecondary education better anticipate these changes in order to be proactive in its response to the nature and pace of the economic changes throughout the remainder of this century and well into the next? If the nation's human resource is to keep pace with technological shifts and economic changes, will more programs for retraining, upgrading, and skill development have to be made available to broader populations of adult workers?

As new technologies are developing and as sectors in the labor force are changing, it is predicted that managers and professionals will need new skills and knowledge in diverse areas ranging from skill-related, to entrepreneurship, to human resource planning. What will be the appropriate role for postsecondary education in professional skill upgrading to keep pace with technological and economic shifts, and in management skill development to be responsive to the changing nature of the workplace and the adult worker? In order to keep pace with changes in technology and the economy, our human capital must be "modernized" in parallel with current initiatives to modernize and better utilize our other resources but the roles and responsibilities of business, postsecordary education, government, and individuals have yet to worked out.

Through a number of the FIPSE projects outreach, counseling, and information services are being made available to diverse groups of adults. As the economy continues to change will there be a need for increasing such services, and, if so, is the postsecondary education enterprise the most appropriate institutional base for providing personal and family counseling and information on: the structure and dynamics of the local labor market; education and training opportunities; new technologies; human resource planning and development; projected supply-demand imbalances of human resources; changes in economic structures; and changes in economic structures? How can postsecondary institutions work with other organizations to provide those support services that may be needed in the future?

A few other questions related to the content of postsecondary education and training should be considered in response to changing realities. First, as the population ages and a larger proportion faces retirement, what role will postsecondary education play in offering programs and services to this segment of the population? Clearly, some persons will need to be trained or retrained in order to continue to earn a living (or to supplement retirement income). Others will need vocational or avocational programs as they are faced with increased amounts of free time. Are approaches which integrate these learners with learners of other age groups better or does this population require its own set of offerings?

Second, the role of general/liberal/humanistic education in a changing economy needs to be examined. Should postsecondary education take the lead in refocusing the nation's attention on the importance of this category of education in the years ahead? Should programs on humanities and business, liberal arts and technology, critical thinking, etc, be developed as viable and necessary alternatives to existing approaches? What is the role of liberal and general education in "education for work" programs? How can work, job, and career oriented programs be used as vehicles for teaching critical thinking,

abstract reasoning, and learning to learn skills commonly transmitted through liberal arts and humanities programs? What is the balance between liberal arts/humanities as a vehicle for preparation for work and education for work as a vehicle for transmitting general and liberal arts skills and knowledge?

Third, what is the appropriate role for postsecondary education to play related to economic literacy and community level planning for and facilitation of economic development? Should postsecondary institutions take the lead in developing strategies in these areas or should they be participants in a process started by other organizations?

Finally, as new management approaches call for increased worker participation in decisions, is it necessary for programs to be offered to adult workers that provide them with "critical thinking" skills appropriate to these new roles? Also, as individuals are faced with increasing job and career changes will they need more programs that provide skills and opportunities for decision making based on reliable information?

Sources of postsecondary education and training are abundant, and diverse. As the labor market continues to change in response to demographic and economic shifts, these sources of education and training should become more responsive. Will new programs be needed as more workers are displaced or as more move into the information and service sectors of the labor force? Will postsecondary education need to look closely at the other sources of education and training to fill in gaps in programs, adults served, and services offered? How can the more traditional providers of postsecondary programs recognize the magnitude and importance of the "shadow" education system and develop partnerships to reduce overlap, redundancy, and competition in an attempt to better serve both adults and employers?

Are new sources of education and training needed in the near future or can better use be made of existing opportunities to respond to the changing economic and social realities facing the nation in the next quarter of a century? The FIPSE Alliance projects offer a number of examples of how diverse sources of postsecondary education and training can be integrated to meet the changing needs of adults, businesses, and communities.

Different modes have long been used to deliver postsecondary education and training to adults. As changes in the economy affect postsecondary education, will increased reliance on alternative methods rather than on one or two will be necessary? In addition to the traditional learning approaches of lectures or small group lecture/discussions, other approaches should be explored.

Can new approaches to scheduling, course structure, timing, and pedagogy offer postsecondary education and training opportunities to larger numbers of adult learners? Some of these alternatives are employed in the FIPSE Alliance projects. Use of new technologies such as teletext, teleconferencing, interactive video, and computers can also offer learning approaches to wide audiences of adult learners. How can postsecondary education and training institutions be made flexible in their delivery of programs to learners? New experiments and demonstrations that use alternative strategies to deliver information, knowledge, and skills to learners should be tried. Unless the

traditional providers of postsecondary education and training are willing to offer alternatives to the standard approaches they may lose out to other providers of postsecondary education and training who are willing and able to offer almost any course or program at almost any time, almost anywhere. As individuals and organizations are responding to changes in technology and in the economy they will want to move quickly and efficiently and will want delivery systems that get them there.

Will the future parallel the present with regard to financial resources for adult learners? Can combinations of resources be used to finance postsecondary education and training or will corporations provide an increasing proportion of the financial resources in the future? It seems safe to conclude that corporations should be expected to pay their fair share for the postsecondary education and training of their employees, but other resources will be needed to support dislocated, re-entry, and other adults. How can more programs like those offered through the FIPSE Alliance projects be developed to support training for dislocated workers? Should States and localities follow the lead of many of these projects and offer tuition free programs to dislocated adults, and will it be necessary for federal and state governments to look at new strategies for financing postsecondary education and training in the future? If increasing numbers of adults will be required to continue their education and training to remain employed, what new means of financing their participation will be necessary? Can postsecondary education stand back and wait for these resources to emerge or will it have to take the lead in looking for alternative answers to the question of who will pay for the education and training needed by individuals, institutions, and the society in general?

A number of critical questions concerning the content, delivery, sources, and financing of the postsecondary education enterprise have been raised. The answers to these questions that are developed by policy makers and practitioners will set the future direction of the enterprise's responses to economic change.

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